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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/890,011

01/03/2002

Otto J. Gregory

4628

6195

7590

02/07/2005

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EXAMINER

LEE, HWA S

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/890,011

Applicant(s)

GREGORY ET AL.

Examiner

Andrew Hwa S. Lee

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-3,5,7-20 is/are rejected.
- 7) ☐ Claim(s) 4 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1, 2, 7, 8, 9, 12, 13, and 20** are rejected under 35 U.S.C. 102(b) as being anticipated by Hartman (US 4,940,328).

Hartman shows an optical sensing apparatus comprising:

a housing (Figure 1, 2) the housing having an interior and exterior surface, the exterior surface having at least two layers (110, 130);

a first optical fiber (107) carrying at least two modes in communication with the first end of the housing;

a second optical fiber (145) carrying at least two modes in communication with the second end of the housing; and

means for detecting the change in the intensity of light (150) when light is passed through the housing, reflected and refracted within the housing and received by the second optical path, the optical waveguide sensor capable of measuring up to 2000  $\mu\epsilon$  when the housing is stressed.

With regards to measuring strain, Hartman teaches that the prior art measured strain, and that the present invention is used for measuring any environmental condition including strain.

With regards to **claim 7 and 12**, the function ability of the sensor being claimed has not been given patentable weight since the claim does not further limit the structure of claim 1 which is drawn to structure.

2. **Claim 10** is rejected under 35 U.S.C. 102(b) as being anticipated by Putnam (US 5,528,367).

Putnam shows an etalon strain sensor comprising:

a housing (33) the housing having an interior and exterior surface, the exterior surface having at least two layers (the housing itself and the protective layer, column 3, lines 53+);

a first optical fiber (35) in communication with the first end of the housing;

a second optical fiber (37) in communication with the second end of the housing;

and

means for detecting the change in the intensity of light (57) when light is passed through the housing, reflected and refracted within the housing and received by the second optical path, the optical waveguide sensor capable of measuring up to 2000  $\mu\epsilon$  when the housing is stressed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2877

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 3, 5, 14, 15, 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartman as applied to claim 1 further in view of Franke.

Hartman shows all the claimed elements but does not expressly show that the polymer layer is polyimide. Franke shows a polymer layer that is polyimide. At the time of the invention, one of ordinary skill in the art would have used polyimide as the polymer layer in Hartman as polyimide is a polymer with excellent optical properties.

4. **Claims 11, 12, 17-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartman as applied to claim 10 and 13 above. Hartman does not expressly show the size and dimensions of the sensor. At the time of the invention, one of ordinary skill in the art would have made the sensor of the size specified in claim 11 as one of ordinary skill in the art would have chosen any size for the sensor as choosing a size is generally recognized as being within the level of ordinary skill in the art.

#### ***Allowable Subject Matter***

1. **Claims 4 and 6** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to show or to suggest an optical waveguide sensor comprising of all the elements as presently claimed wherein the material of the first layer is selected from the group consisting of aluminum, silver, platinum and palladium.

Art Unit: 2877

*Conclusion*

Papers related to this application may be submitted to Technology Center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the PTO Fax Center located in CP4-4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Center number is 703-872-9306 for regular communications and for After Final communications.

If the Applicant wishes to send a Fax dealing with either a Proposed Amendment or for discussion for a phone interview then the fax should:

a) Contain either the statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax Cover Sheet; and


b) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa Lee whose telephone number is (571) 272-2419.

The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415.



Andrew Lee  
Patent Examiner  
Art Unit 2877  
February 3, 2005/ahl